

Name: _____

Date: _____

Final Examination

Answer Key to Final Exam I

1. C
2. B (according to S.6., the nominal capacity may not exceed $CLC \times (N - 0.5)$; here $50,000 \times (4 - 0.5) = 175,000$).
3. A
4. B (since the scales in a multiple-weighing system constitute a single element, this system has a total of 15,000 divisions ($60,000/20 \times 5$), exceeding the limitation of S.5.2. and Table 3 (10,000 divisions).
5. D
6. A
7. B
8. A
9. C
10. D
11. A
12. C
13. A
14. B
15. D
16. A, B, C, E, G, I
17. C
18. A
19. C
20. A

For Part II see completed worksheets

Name: _____

Date: _____

TOLERANCE WORKSHEET					
MECHANICAL DIAL – VEHICLE OR AXLE-LOAD SCALE					
DIAL CAPACITY:		20,000 lb		500 d	10,000 lb
CLC or SECTION CAPACITY		50,000 lb		1000 d	20,000 lb
SCALE CAPACITY		100,000 lb		1500 d	30,000 lb
VALUE OF SCALE DIVISION		20 lb		2000 d	lb
NUMBER OF SCALE DIVISIONS		5000		2500 d	lb
AVAILABLE CERT. TEST WEIGHTS		30,000 lb		3000 d	lb
MARKED IIII	Yes	X No		3500 d	lb
TOLERANCE TO BE APPLIED	X ACCEPTANCE		MAINTENANCE		
TEST LOAD DESCRIPTION	TEST LOAD POUNDS	TOLERANCE in d	TOLERANCE in d	ACCEPTABLE RANGE OF SCALE INDICATION	
INCREASING-LOAD AND SHIFT TEST				Minimum Pounds	Maximum Pounds
At ¼ dial capacity	5,000	0.5	10		
At ½ dial capacity	10,000	0.5	10		
At ¾ dial capacity	15,000	1	20		
At full dial capacity	20,000	1	20		
At each unit weight	20,000	1	20		
SHIFT TEST					
AT ½ CLC, SECT.CAP, OR TEST LOAD:	15,000	1	20		
Range of Results Must be within:		2	40		
CONTINUE INCREASING-LOAD AND SHIFT TEST AT EACH TOLERANCE BREAK POINT					
	30,000	1.5	30		
SHIFT TEST AT CLC, SECTION CAPACITY, OR TEST LOAD CAPACITY					
	30,000	1.5	30		
Range of Results must be within:		3	60		
DECREASING-LOAD TEST (at ½ AVAILABLE LOAD)	15,000	1	20		
STRAIN-LOAD TEST (applied only to certified test weights)	30,000	1.5	30		
ZERO-BALANCE CHANGE	0	0.5	10		

Name: _____

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TOLERANCE WORKSHEET MECHANICAL DIAL – VEHICLE OR AXLE-LOAD SCALE					
DIAL CAPACITY:		lb		500 d lb	
CLC or SECTION CAPACITY		lb		1000 d lb	
SCALE CAPACITY		lb		1500 d lb	
VALUE OF SCALE DIVISION		lb		2000 d lb	
NUMBER OF SCALE DIVISIONS				2500 d lb	
AVAILABLE CERT. TEST WEIGHTS		lb		3000 d lb	
MARKED IIIIL	_____Yes	No		3500 d	lb
TOLERANCE TO BE APPLIED	ACCEPTANCE		MAINTENANCE		
TEST LOAD DESCRIPTION	TEST LOAD POUNDS	TOLERANCE in d	TOLERANCE in d	ACCEPTABLE RANGE OF SCALE INDICATION	
INCREASING-LOAD AND SHIFT TEST				Minimum Pounds	Maximum Pounds
At ¼ dial capacity					
At ½ dial capacity					
At ¾ dial capacity					
At full dial capacity					
At each unit weight					
SHIFT TEST					
AT ½ CLC, SECT.CAP, OR TEST LOAD:					
Range of Results Must be within:					
CONTINUE INCREASING-LOAD AND SHIFT TEST AT EACH TOLERANCE BREAK POINT					
SHIFT TEST AT CLC, SECTION CAPACITY, OR TEST LOAD CAPACITY					
Range of Results must be within:					
DECREASING-LOAD TEST (at ½ AVAILABLE LOAD)					
STRAIN-LOAD TEST (applied only to certified test weights)					
ZERO-BALANCE CHANGE					

Name: _____

Date: _____

TOLERANCE WORKSHEET ELECTRONIC – VEHICLE OR AXLE-LOAD SCALE					
CLC or SECTION CAPACITY		60,000 lb		500 d	10,000 lb
				1000 d	20,000 lb
SCALE CAPACITY		100,000 lb		1500 d	30,000 lb
VALUE OF SCALE DIVISION		20 lb		2000 d	lb
NUMBER OF SCALE DIVISIONS		5000		2500 d	lb
AVAILABLE CERT. TEST WEIGHTS		30,000 lb		3000 d	lb
MARKED IIII	<input checked="" type="checkbox"/> Yes	No		3500 d	lb
TOLERANCE TO BE APPLIED	ACCEPTANCE		<input checked="" type="checkbox"/> MAINTENANCE		
TEST LOAD DESCRIPTION	TEST LOAD POUNDS	TOLERANCE in d	TOLERANCE in d	ACCEPTABLE RANGE OF SCALE INDICATION	
INCREASING-LOAD AND SHIFT TEST AT EACH TOL. BREAK POINT				Minimum Pounds	Maximum Pounds
	10,000	1	20		
SHIFT TEST					
AT ½ CLC, SECT.CAP, OR TEST LOAD:	15,000	2	40		
Range of Results Must be within:		2	40		
CONTINUE INCREASING-LOAD AND SHIFT TEST AT EACH TOLERANCE BREAK POINT					
	20,000	2	40		
	30,000	3	60		
SHIFT TEST AT CLC, SECTION CAPACITY, OR TEST LOAD CAPACITY					
	30,000	3	60		
Range of Results must be within:		3	60		
DECREASING-LOAD TEST (at ½ AVAILABLE LOAD)	15,000	2	40		
STRAIN-LOAD TEST (applied only to certified test weights)	30,000	3	60		
ZERO-BALANCE CHANGE	0	1	20		

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Date: _____

TOLERANCE WORKSHEET ELECTRONIC – VEHICLE OR AXLE-LOAD SCALE					
CLC or SECTION CAPACITY	lb			500 d	lb
				1000 d	lb
SCALE CAPACITY	lb			1500 d	lb
VALUE OF SCALE DIVISION	lb			2000 d	lb
NUMBER OF SCALE DIVISIONS				2500 d	lb
AVAILABLE CERT. TEST WEIGHTS	lb			3000 d	lb
MARKED IIIIL	Yes	No		3500 d	lb
TOLERANCE TO BE APPLIED	ACCEPTANCE		MAINTENANCE		
TEST LOAD DESCRIPTION	TEST LOAD POUNDS	TOLERANCE in d	TOLERANCE in d	ACCEPTABLE RANGE OF SCALE INDICATION	
INCREASING-LOAD AND SHIFT TEST AT EACH TOL. BREAK POINT				Minimum Pounds	Maximum Pounds
SHIFT TEST					
AT ½ CLC, SECT.CAP, OR TEST LOAD:					
Range of Results Must be within:					
CONTINUE INCREASING-LOAD AND SHIFT TEST AT EACH TOLERANCE BREAK POINT					
SHIFT TEST AT CLC, SECTION CAPACITY, OR TEST LOAD CAPACITY					
Range of Results must be within:					
DECREASING-LOAD TEST (at ½ AVAILABLE LOAD)					
STRAIN-LOAD TEST (applied only to certified test weights)					
ZERO-BALANCE CHANGE					

Name: _____

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TOLERANCE WORKSHEET						
FULL CAPACITY BEAM- VEHICLE OR AXLE-LOAD SCALE						
BEAM CAPACITY		100,000 lb			500 d	5,000 lb
FRACTIONAL BAR CAPACITY		990 lb			1000 d	10,000 lb
CLC or SECTION CAPACITY		50,000 lb			1500 d	15,000 lb
SCALE CAPACITY		100,000 lb			2000 d	20,000 lb
VALUE OF SCALE DIVISION		10 lb			2500 d	25,000 lb
NUMBER OF SCALE DIVISIONS		10,000			3000 d	30,000 lb
AVAILABLE CERT. TEST WEIGHTS		30,000 lb			3500 d	lb
MARKED IIII	Yes	X No				
TOLERANCE TO BE APPLIED	ACCEPTANCE		X MAINTENANCE			
TEST LOAD DESCRIPTION	TEST LOAD POUNDS	TOLERANCE in d	TOLERANCE in d	ACCEPTABLE RANGE OF SCALE INDICATION		
INCREASING-LOAD AND SHIFT TEST AT EACH TOL. BREAK POINT				Minimum Pounds	Maximum Pounds	
at ½ fractional bar cap.	500	1	10			
at full fractional bar cap.	990	1	10			
At each tolerance breakpoint.	5,000	1	10			
	10,000	2	20			
SHIFT TEST						
AT ½ CLC, SECT.CAP, OR TEST LOAD:	15,000	3	30			
Range of Results Must be within:		3	30			
CONTINUE INCREASING-LOAD AND SHIFT TEST AT EACH TOLERANCE BREAK POINT						
	20,000	4	40			
	25,000	5	50			
	30,000	6	60			
SHIFT TEST AT CLC, SECTION CAPACITY, OR TEST LOAD CAPACITY						
	30,000	6	60			
Range of Results must be within:		6	60			
STRAIN-LOAD TEST (applied only to certified test weights)	30,000	6	60			
ZERO-BALANCE CHANGE	0	1	10			

Name: _____

Date: _____

TOLERANCE WORKSHEET						
FULL CAPACITY BEAM – VEHICLE OR AXLE-LOAD SCALE						
BEAM CAPACITY		lb			500 d	lb
FRACTIONAL BAR CAPACITY		lb			1000 d	lb
CLC or SECTION CAPACITY		lb			1500 d	lb
SCALE CAPACITY		lb			2000 d	lb
VALUE OF SCALE DIVISION		lb			2500 d	lb
NUMBER OF SCALE DIVISIONS					3000 d	lb
AVAILABLE CERT. TEST WEIGHTS		lb			3500 d	lb
MARKED IIII	Yes	No				
TOLERANCE TO BE APPLIED	ACCEPTANCE		MAINTENANCE			
TEST LOAD DESCRIPTION	TEST LOAD POUNDS	TOLERANCE in d	TOLERANCE in d	ACCEPTABLE RANGE OF SCALE INDICATION		
INCREASING-LOAD AND SHIFT TEST AT EACH TOL. BREAK POINT				Minimum Pounds	Maximum Pounds	
at ½ fractional bar cap.						
at full fractional bar cap.						
At each tolerance breakpoint.						
SHIFT TEST						
AT ½ CLC, SECT.CAP, OR TEST LOAD:						
Range of Results Must be within:						
CONTINUE INCREASING-LOAD AND SHIFT TEST AT EACH TOLERANCE BREAK POINT						
SHIFT TEST AT CLC, SECTION CAPACITY, OR TEST LOAD CAPACITY						
Range of Results must be within:						
STRAIN-LOAD TEST (applied only to certified test weights)						
ZERO-BALANCE CHANGE						

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